

RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number:

10/6221201

Source:

IFW16

Date Processed by STIC:

3/15/05

ENTERED

CRF Errors Edited by the STIC Systems Branch

Serial Number:

10/622,201

CRF Edit Date:

3/15/05

Edited by: JCL

- Realigned nucleic acid/amino acid numbers/text in cases where the sequence text "wrapped" to the next line
- Corrected the SEQ ID NO. Sequence numbers edited were:

- Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited:

Deleted: invalid beginning/end-of-file text ; page numbers

- Inserted mandatory headings/numeric identifiers, specifically:

- Moved responses to same line as heading/numeric identifier, specifically:

- Other:



IFW16

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/622,201

DATE: 03/15/2005
TIME: 17:01:43

Input Set : A:\PTO.KD.txt
Output Set: N:\CRF4\03152005\J622201.raw

3 <110> APPLICANT: Barry, Gerard F.
 4 Kishore, Ganesh M.
 5 Padgette, Stephen R.
 6 Stallings, William C.
 8 <120> TITLE OF INVENTION: GLYPHOSATE TOLERANT 5-ENOLPYRUVYLSHIKIMATE-3-PHOSPHATE
 SYNTHASES

(pg. 6)

11 <130> FILE REFERENCE: 11899.0175.REUS07	
13 <140> CURRENT APPLICATION NUMBER: 10/622,201	
14 <141> CURRENT FILING DATE: 2003-07-18	
16 <150> PRIOR APPLICATION NUMBER: US 08/306,063	
17 <151> PRIOR FILING DATE: 1994-09-13	
19 <150> PRIOR APPLICATION NUMBER: US 07/749,611	
20 <151> PRIOR FILING DATE: 1991-08-28	
22 <150> PRIOR APPLICATION NUMBER: US 07/576,537	
23 <151> PRIOR FILING DATE: 1990-08-31	
25 <160> NUMBER OF SEQ ID NOS: 70	
27 <170> SOFTWARE: PatentIn version 3.3	
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31 <212> TYPE: DNA	
32 <213> ORGANISM: Figwort mosaic virus	
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39 aggaagaatt ctcagtccaa agcctaaca aggtcagggt acagagtctc caaacattta	180
41 gccaaagact acaggagatc aatgaagaat cttcaatcaa agtaaactac tgttccagca	240
43 catgcatcat ggtcagtaag tttcagaaaa agacatccac cgaagactta aagtttagtgg	300
45 gcatcttga aagtaatctt gtcaacatcg agcagctggc ttgtggggac cagacaaaaaa	360
47 aggaatggtg cagaattgtt aggcgcacct accaaaagca tctttgcctt tattgcaaag	420
49 ataaaggcaga ttccctctagt acaagtgggg aacaaaataa cgtggaaaag agctgtcctg	480
51 acagcccact cactaatgcg tatgacgaac gcagtgacga ccacaaaaga attccctcta	540
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58 <212> TYPE: DNA	
59 <213> ORGANISM: Agrobacterium sp.	
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63 <221> NAME/KEY: CDS	
64 <222> LOCATION: (62)..(1426)	
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69 c atg tcg cac ggt gca agc agc cgg ccc gca acc gcc cgc aaa tcc tct	109
70 Met Ser His Gly Ala Ser Ser Arg Pro Ala Thr Ala Arg Lys Ser Ser	
71 1 5 10 15	

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Input Set : A:\PTO.KD.txt

Output Set: N:\CRF4\03152005\J622201.raw

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74	Gly	Leu	Ser	Gly	Thr	Val	Arg	Ile	Pro	Gly	Asp	Lys	Ser	Ile	Ser	His	
75					20				25						30		
77	cg	ttc	atg	ttc	ggc	ggt	ctc	g	g	ac	gg	a	aa	ac	gg	atc	205
78	Arg	Ser	Phe	Met	Phe	Gly	Gly	Leu	Ala	Ser	Gly	Glu	Thr	Arg	Ile	Thr	
79								35		40			45				
81	ggc	ctt	ctg	gaa	ggc	gag	gac	gtc	atc	aat	ac	gg	cc	atg	cag		253
82	Gly	Leu	Leu	Glu	Gly	Glu	Asp	Val	Ile	Asn	Thr	Gly	Lys	Ala	Met	Gln	
83								50		55			60				
85	ggc	atg	ggc	ggc	agg	atc	cgt	aag	gaa	ggc	gac	acc	tgg	atc	atc	gat	301
86	Ala	Met	Gly	Ala	Arg	Ile	Arg	Lys	Glu	Gly	Asp	Thr	Trp	Ile	Ile	Asp	
87	65							70		75			80				
89	ggc	gtc	ggc	aat	ggc	ggc	ctc	ctg	g	cg	cc	c	tc	gat	ttc		349
90	Gly	Val	Gly	Asn	Gly	Gly	Leu	Leu	Ala	Pro	Glu	Ala	Pro	Leu	Asp	Phe	
91							85		90			95					
93	ggc	aat	gcc	ggc	ac	ggc	tgc	cg	ctg	acc	atg	ggc	ctc	gtt	ggg	gtc	397
94	Gly	Asn	Ala	Ala	Thr	Gly	Cys	Arg	Leu	Thr	Met	Gly	Leu	Val	Gly	Val	
95							100		105			110					
97	tac	gat	ttc	gac	agc	acc	ttc	atc	ggc	gac	ggc	tc	tc	aca	aag	cg	445
98	Tyr	Asp	Phe	Asp	Ser	Thr	Phe	Ile	Gly	Asp	Ala	Ser	Leu	Thr	Lys	Arg	
99							115		120			125					
101	ccg	atg	ggc	cg	gt	tg	tt	aa	cc	ctg	cg	gaa	atg	ggc	gt	tg	493
102	Pro	Met	Gly	Arg	Val	Leu	Asn	Pro	Leu	Arg	Glu	Met	Gly	Val	Gln	Val	
103							130		135			140					
105	aaa	tcg	gaa	gac	gg	gt	ctt	cc	gtt	acc	ttg	cg	gg	cc	aag		541
106	Lys	Ser	Glu	Asp	Gly	Asp	Arg	Leu	Pro	Val	Thr	Leu	Arg	Gly	Pro	Lys	
107	145						150		155			160					
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110	Thr	Pro	Thr	Pro	Ile	Thr	Tyr	Arg	Val	Pro	Met	Ala	Ser	Ala	Gln	Val	
111							165		170			175					
113	aag	tcc	ggc	gt	ctg	ctc	ggc	ctc	aa	ac	cc	gg	ac	cc	ac		637
114	Lys	Ser	Ala	Val	Leu	Leu	Ala	Gly	Leu	Asn	Thr	Pro	Gly	Ile	Thr	Thr	
115							180		185			190					
117	gtc	atc	gag	cc	atc	atg	ac	cg	gt	cat	ac	g	aa	aag	atg	ctg	685
118	Val	Ile	Glu	Pro	Ile	Met	Thr	Arg	Asp	His	Thr	Glu	Lys	Met	Leu	Gln	
119							195		200			205					
121	ggc	ttt	ggc	ggc	aa	cc	t	cc	gg	atg	gg	gac	gg	gt	cg	cg	733
122	Gly	Phe	Gly	Ala	Asn	Leu	Thr	Val	Glu	Thr	Asp	Ala	Asp	Gly	Val	Arg	
123							210		215			220					
125	acc	atc	cg	ctg	gaa	ggc	cg	cc	gg	ac	cc	gg	ca	gt	atc	gac	781
126	Thr	Ile	Arg	Leu	Glu	Gly	Arg	Gly	Lys	Leu	Thr	Gly	Gln	Val	Ile	Asp	
127	225						230		235			240					
129	gt	cc	gg	ac	cc	ttc	gg	cc	tc	cg	gtt	gg	cc	ct			829
130	Val	Pro	Gly	Asp	Pro	Ser	Ser	Thr	Ala	Phe	Pro	Leu	Val	Ala	Ala	Leu	
131							245		250			255					
133	ctt	gtt	cc	gg	tcc	gac	gt	cc	atc	cc	aa	gt	ct	atg	aa	cc	877
134	Leu	Val	Pro	Gly	Ser	Asp	Val	Thr	Ile	Leu	Asn	Val	Leu	Met	Asn	Pro	
135							260		265			270					
137	acc	cgc	acc	ggc	ctc	atc	ctg	ac	ctg	cag	gaa	atg	ggc	cc	gac	atc	925

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Output Set: N:\CRF4\03152005\J622201.raw

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142	Glu Val Ile Asn Pro Arg Leu Ala Gly Gly Glu Asp Val Ala Asp Leu			
143	290	295	300	
145	cgc gtt cgc tcc tcc acg ctg aag ggc gtc acg gtg ccg gaa gac cgc	1021		
146	Arg Val Arg Ser Ser Thr Leu Lys Gly Val Thr Val Pro Glu Asp Arg			
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149	gcg cct tcg atg atc gac gaa tat ccg att ctc gct gtc gcc gcc	1069		
150	Ala Pro Ser Met Ile Asp Glu Tyr Pro Ile Leu Ala Val Ala Ala Ala			
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153	tcc gcg gaa ggg gcg acc gtc atg aac ggt ctg gaa gaa ctc cgc gtc	1117		
154	Phe Ala Glu Gly Ala Thr Val Met Asn Gly Leu Glu Glu Leu Arg Val			
155	340	345	350	
157	aag gaa agc gac cgc ctc tcg gcc gtc gcc aat ggc ctc aag ctc aat	1165		
158	Lys Glu Ser Asp Arg Leu Ser Ala Val Ala Asn Gly Leu Lys Leu Asn			
159	355	360	365	
161	ggc gtc gat tgc gat gag ggc gag acg tcg ctc gtc gtc cgc ggc cgc	1213		
162	Gly Val Asp Cys Asp Glu Gly Glu Thr Ser Leu Val Val Arg Gly Arg			
163	370	375	380	
165	cct gac ggc aag ggg ctc ggc aac gcc tcg ggc gcc gtc gcc acc	1261		
166	Pro Asp Gly Lys Gly Leu Gly Asn Ala Ser Gly Ala Ala Val Ala Thr			
167	385	390	395	400
169	cat ctc gat cac cgc atc gcc atg agc ttc ctc gtc atg ggc ctc gtc	1309		
170	His Leu Asp His Arg Ile Ala Met Ser Phe Leu Val Met Gly Leu Val			
171	405	410	415	
173	tcg gaa aac cct gtc acg gtc gac gat gcc acg atg atc gcc acg agc	1357		
174	Ser Glu Asn Pro Val Thr Val Asp Asp Ala Thr Met Ile Ala Thr Ser			
175	420	425	430	
177	tcc ccg gag ttc atg gac ctg atg gcc ggg ctg ggc gcg aag atc gaa	1405		
178	Phe Pro Glu Phe Met Asp Leu Met Ala Gly Leu Gly Ala Lys Ile Glu			
179	435	440	445	
181	ctc tcc gat acg aag gct gcc tgatgacatt cacaatgcc atcgatggc	1456		
182	Leu Ser Asp Thr Lys Ala Ala			
183	450	455		
185	ccgctgcggc cggcaagggg acgctctcgc gccgtatcgc ggaggtctat ggcttcata	1516		
187	atctcgatac gggcctgacc tatcgccca cggccaaagc gctgctcgat cgccgcctgt	1576		
189	cgttgcgtga cgaggcggtt gcggccgatg tcgcccgc aa tctcgatctt gcccggctcg	1636		
191	accggctcggt gctgtcggcc catgccatcg gcgaggcggt ttcgaagatc gcggtcatgc	1696		
193	cctcggtcg cggggcgctg gtcgaggcgc agcgcagctt tgcggcgctg gagccggca	1756		
195	cgggtctgga tggacgcgt atcggcacgg tggctctgcc ggatgcggc gtgaagctct	1816		
197	atgtcaccgc gtcaccggaa gtgcgcgcga aacccgcata tgacgaaatc ctggcaatg	1876		
199	gcgggttggc cgattacggg acgatctcg aggatatccg ccggcgac gagcgggaca	1936		
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205	<211> LENGTH: 455			
206	<212> TYPE: PRT			
207	<213> ORGANISM: Agrobacterium sp.			
209	<400> SEQUENCE: 3			

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/622,201

DATE: 03/15/2005
TIME: 17:01:43

Input Set : A:\PTO.KD.txt
Output Set: N:\CRF4\03152005\J622201.raw

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216 20 25 30
219 Arg Ser Phe Met Phe Gly Gly Leu Ala Ser Gly Glu Thr Arg Ile Thr
220 35 40 45
223 Gly Leu Leu Glu Gly Glu Asp Val Ile Asn Thr Gly Lys Ala Met Gln
224 50 55 60
227 Ala Met Gly Ala Arg Ile Arg Lys Glu Gly Asp Thr Trp Ile Ile Asp
228 65 70 75 80
231 Gly Val Gly Asn Gly Gly Leu Leu Ala Pro Glu Ala Pro Leu Asp Phe
232 85 90 95
235 Gly Asn Ala Ala Thr Gly Cys Arg Leu Thr Met Gly Leu Val Gly Val
236 100 105 110
239 Tyr Asp Phe Asp Ser Thr Phe Ile Gly Asp Ala Ser Leu Thr Lys Arg
240 115 120 125
243 Pro Met Gly Arg Val Leu Asn Pro Leu Arg Glu Met Gly Val Gln Val
244 130 135 140
247 Lys Ser Glu Asp Gly Asp Arg Leu Pro Val Thr Leu Arg Gly Pro Lys
248 145 150 155 160
251 Thr Pro Thr Pro Ile Thr Tyr Arg Val Pro Met Ala Ser Ala Gln Val
252 165 170 175
255 Lys Ser Ala Val Leu Leu Ala Gly Leu Asn Thr Pro Gly Ile Thr Thr
256 180 185 190
259 Val Ile Glu Pro Ile Met Thr Arg Asp His Thr Glu Lys Met Leu Gln
260 195 200 205
263 Gly Phe Gly Ala Asn Leu Thr Val Glu Thr Asp Ala Asp Gly Val Arg
264 210 215 220
267 Thr Ile Arg Leu Glu Gly Arg Gly Lys Leu Thr Gly Gln Val Ile Asp
268 225 230 235 240
271 Val Pro Gly Asp Pro Ser Ser Thr Ala Phe Pro Leu Val Ala Ala Leu
272 245 250 255
275 Leu Val Pro Gly Ser Asp Val Thr Ile Leu Asn Val Leu Met Asn Pro
276 260 265 270
279 Thr Arg Thr Gly Leu Ile Leu Thr Leu Gln Glu Met Gly Ala Asp Ile
280 275 280 285
283 Glu Val Ile Asn Pro Arg Leu Ala Gly Gly Glu Asp Val Ala Asp Leu
284 290 295 300
287 Arg Val Arg Ser Ser Thr Leu Lys Gly Val Thr Val Pro Glu Asp Arg
288 305 310 315 320
291 Ala Pro Ser Met Ile Asp Glu Tyr Pro Ile Leu Ala Val Ala Ala Ala
292 325 330 335
295 Phe Ala Glu Gly Ala Thr Val Met Asn Gly Leu Glu Glu Leu Arg Val
296 340 345 350
299 Lys Glu Ser Asp Arg Leu Ser Ala Val Ala Asn Gly Leu Lys Leu Asn
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303 Gly Val Asp Cys Asp Glu Gly Glu Thr Ser Leu Val Val Arg Gly Arg
304 370 375 380
307 Pro Asp Gly Lys Gly Leu Gly Asn Ala Ser Gly Ala Ala Val Ala Thr

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RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/622,201

DATE: 03/15/2005
TIME: 17:01:43

Input Set : A:\PTO.KD.txt
Output Set: N:\CRF4\03152005\J622201.raw

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312	405	410	415	
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342	1 5			
344	gca acc gcc cgcc tcg gag gca ctc acg ggc gaa atc cgcc att ccg	160		
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348	ggc gac aag tcc atc tcg cat cgcc tcc ttc atg ttt ggc ggt ctc gca	208		
349	Gly Asp Lys Ser Ile Ser His Arg Ser Phe Met Phe Gly Gly Leu Ala			
350	30 35 40			
352	tcg ggc gaa acc cgcc atc acc ggc ctt ctg gaa ggc gag gac gtc atc	256		
353	Ser Gly Glu Thr Arg Ile Thr Gly Leu Leu Glu Gly Glu Asp Val Ile			
354	45 50 55			
356	aat aca ggc cgcc gcc atg cag gcc atg ggc gcg aaa atc cgt aaa gag	304		
357	Asn Thr Gly Arg Ala Met Gln Ala Met Gly Ala Lys Ile Arg Lys Glu			
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360	ggc gat gtc tgg atc atc aac ggc gtc ggc aat ggc tgc ctg ttg cag	352		
361	Gly Asp Val Trp Ile Ile Asn Gly Val Gly Asn Gly Cys Leu Gln			
362	75 80 85			
364	ccc gaa gct ggc ctc gat ttc ggc aat gcc gga acc ggc gcg cgcc ctc	400		
365	Pro Glu Ala Ala Leu Asp Phe Gly Asn Ala Gly Thr Gly Ala Arg Leu			
366	90 95 100 105			
368	acc atg ggc ctt gtc ggc acc tat gac atg aag acc tcc ttt atc ggc	448		
369	Thr Met Gly Leu Val Gly Thr Tyr Asp Met Lys Thr Ser Phe Ile Gly			
370	110 115 120			
372	gac gcc tcg ctg tcg aag cgcc ccg atg ggc ggc cgcc gtg ctg aac ccg ttg	496		
373	Asp Ala Ser Leu Ser Lys Arg Pro Met Gly Arg Val Leu Asn Pro Leu			
374	125 130 135			
376	cgc gaa atg ggc gtt cag gtg gaa gca gcc gat ggc gac cgcc atg ccg	544		
377	Arg Glu Met Gly Val Gln Val Glu Ala Ala Asp Gly Asp Arg Met Pro			
378	140 145 150			
380	ctg acg ctg atc ggc ccg aag acg gcc aat ccg atc acc tat cgcc gtg	592		

RAW SEQUENCE LISTING ERROR SUMMARY DATE: 03/15/2005
PATENT APPLICATION: US/10/622,201 TIME: 17:01:44

Input Set : A:\PTO.KD.txt
Output Set: N:\CRF4\03152005\J622201.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:18; Xaa Pos. 1,18
Seq#:22; N Pos. 9
Seq#:23; N Pos. 9
Seq#:30; Xaa Pos. 1
Seq#:37; Xaa Pos. 2,4
Seq#:38; Xaa Pos. 4
Seq#:39; Xaa Pos. 4
Seq#:40; Xaa Pos. 2
Seq#:54; Xaa Pos. 8

VERIFICATION SUMMARY

PATENT APPLICATION: US/10/622,201

DATE: 03/15/2005

TIME: 17:01:44

Input Set : A:\PTO.KD.txt

Output Set: N:\CRF4\03152005\J622201.raw

L:1307 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:18 after pos.:0

M:341 Repeated in SeqNo=18

L:1367 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:22 after pos.:0

L:1388 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23 after pos.:0

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L:2789 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:54 after pos.:0



IFW16

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/622,201

DATE: 03/10/2005
TIME: 15:45:20

Input Set : A:\11899.0175.REUS07.ST25.txt
Output Set: N:\CRF4\03102005\J622201.raw

3 <110> APPLICANT: Barry, Gerard F.
4 Kishore, Ganesh M.
5 Padgette, Stephen R.
6 Stallings, William C.
8 <120> TITLE OF INVENTION: GLYPHOSATE TOLERANT 5-ENOLPYRUVYL SHIKIMATE-3-PHOSPHATE
SYNTHASES
11 <130> FILE REFERENCE: 11899.0175.REUS07
13 <140> CURRENT APPLICATION NUMBER: 10/622,201
14 <141> CURRENT FILING DATE: 2003-07-18
16 <150> PRIOR APPLICATION NUMBER: US 08/306,063
17 <151> PRIOR FILING DATE: 1994-09-13
19 <150> PRIOR APPLICATION NUMBER: US 07/749,611
20 <151> PRIOR FILING DATE: 1991-08-28
22 <150> PRIOR APPLICATION NUMBER: US 07/576,537
23 <151> PRIOR FILING DATE: 1990-08-31
25 <160> NUMBER OF SEQ ID NOS: 70
27 <170> SOFTWARE: PatentIn version 3.3

Does Not Comply
Corrected Diskette Needed
(pg. 2-5) ↗

ERRORED SEQUENCES

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4581 <212> TYPE: PRT
4582 <213> ORGANISM: Dichelobacter nodosus
4584 <400> SEQUENCE: 69
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4594 Leu Ala Ala Leu Ala Glu Gly Gln Thr Glu Ile Arg Gly Phe Leu Ala
4595 35 40 45
4598 Cys Ala Asp Cys Leu Ala Thr Arg Gln Ala Leu Arg Ala Leu Gly Val
4599 50 55 60
4602 Asp Ile Gln Arg Glu Lys Glu Ile Val Thr Ile Arg Gly Val Gly Phe
4603 65 70 75 80
4606 Leu Gly Leu Gln Pro Pro Lys Ala Pro Leu Asn Met Gln Asn Ser Gly
4607 85 90 95
4610 Thr Ser Met Arg Leu Leu Ala Gly Ile Leu Ala Ala Gln Arg Phe Glu
4611 100 105 110
4614 Ser Val Leu Cys Gly Asp Glu Ser Leu Glu Lys Arg Pro Met Gln Arg
4615 115 120 125
4618 Ile Ile Thr Pro Leu Val Gln Met Gly Ala Lys Ile Val Ser His Ser
4619 130 135 140

RAW SEQUENCE LISTING
PATENT APPLICATION: US/10/622,201

DATE: 03/10/2005
TIME: 15:45:20

Input Set : A:\11899.0175.REUS07.ST25.txt
Output Set: N:\CRF4\03102005\J622201.raw

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 4630 Leu Ala Gly Leu Leu Ala Asp Gly Thr Thr Arg Leu His Thr Cys Gly
 4631 180 185 190
 4634 Ile Ser Arg Asp His Thr Glu Arg Met Leu Pro Leu Phe Gly Gly Ala
 4635 195 200 205
 4638 Leu Glu Ile Lys Lys Glu Gln Ile Ile Val Thr Gly Gly Gln Lys Leu
 4639 210 215 220
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 4643 225 230 235 240
 4646 Phe Met Val Ala Ala Leu Ile Ala Pro Arg Ala Glu Val Val Ile Arg
 4647 245 250 255
 4650 Asn Val Gly Ile Asn Pro Thr Arg Ala Ala Ile Ile Thr Leu Leu Gln
 4651 260 265 270
 4654 Lys Met Gly Gly Arg Ile Glu Leu His His Gln Arg Phe Trp Gly Ala
 4655 275 280 285
 4658 Glu Pro Val Ala Asp Ile Val Val Tyr His Ser Lys Leu Arg Gly Ile
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 4662 Thr Val Ala Pro Glu Trp Ile Ala Asn Ala Ile Asp Glu Leu Pro Ile
 4663 305 310 315 320
 4666 Phe Phe Ile Ala Ala Ala Cys Ala Glu Gly Thr Thr Phe Val Gly Asn
 4667 325 330 335
 4670 Leu Ser Glu Leu Arg Val Lys Glu Ser Asp Arg Leu Ala Ala Met Ala
 4671 340 345 350
 4674 Gln Asn Leu Gln Thr Leu Gly Val Ala Cys Asp Val Gly Ala Asp Phe
 4675 355 360 365
 4678 Ile His Ile Tyr Gly Arg Ser Asp Arg Gln Phe Leu Pro Ala Arg Val
 4679 370 375 380
 4682 Asn Ser Phe Gly Asp His Arg Ile Ala Met Ser Leu Ala Val Ala Gly
 4683 385 390 395 400
 4686 Val Arg Ala Ala Gly Glu Leu Leu Ile Asp Asp Gly Ala Val Ala Ala
 4687 405 410 415
 4690 Val Ser Met Pro Gln Phe Arg Asp Phe Ala Ala Ala Ile Gly Met Asn
 4691 420 425 430
 4694 Val Gly Glu Lys Asp Ala Lys Asn Cys His Asp
 4695 435 440

E--> 4697

4698 <210> SEQ ID NO: 70
 4699 <211> LENGTH: 455
 4700 <212> TYPE: PRT
 4701 <213> ORGANISM: Artificial sequence
 4703 <220> FEATURE:
 4704 <223> OTHER INFORMATION: Synthetic
 4706 <400> SEQUENCE: 70
 4708 Met Leu His Gly Ala Ser Ser Arg Pro Ala Thr Ala Arg Lys Ser Ser
 4709 1 5 10 15
 4712 Gly Leu Ser Gly Thr Val Arg Ile Pro Gly Asp Lys Ser Ile Ser His

See page 5 for
error explanation.

RAW SEQUENCE LISTING

DATE: 03/10/2005

PATENT APPLICATION: US/10/622,201

TIME: 15:45:20

Input Set : A:\11899.0175.REUS07.ST25.txt

Output Set: N:\CRF4\03102005\J622201.raw

4713	20	25	30
4716	Arg Ser Phe Met Phe Gly Gly Leu Ala Ser Gly Glu Thr Arg Ile Thr		
4717	35	40	45
4720	Gly Leu Leu Glu Gly Glu Asp Val Ile Asn Thr Gly Lys Ala Met Gln		
4721	50	55	60
4724	Ala Met Gly Ala Arg Ile Arg Lys Glu Gly Asp Thr Trp Ile Ile Asp		
4725	65	70	75
4728	Gly Val Gly Asn Gly Gly Leu Leu Ala Pro Glu Ala Pro Leu Asp Phe		
4729	85	90	95
4732	Gly Asn Ala Ala Thr Gly Cys Arg Leu Thr Met Gly Leu Val Gly Val		
4733	100	105	110
4736	Tyr Asp Phe Asp Ser Thr Phe Ile Gly Asp Ala Ser Leu Thr Lys Arg		
4737	115	120	125
4740	Pro Met Gly Arg Val Leu Asn Pro Leu Arg Glu Met Gly Val Gln Val		
4741	130	135	140
4744	Lys Ser Glu Asp Gly Asp Arg Leu Pro Val Thr Leu Arg Gly Pro Lys		
4745	145	150	155
4748	Thr Pro Thr Pro Ile Thr Tyr Arg Val Pro Met Ala Ser Ala Gln Val		
4749	165	170	175
4752	Lys Ser Ala Val Leu Leu Ala Gly Leu Asn Thr Pro Gly Ile Thr Thr		
4753	180	185	190
4756	Val Ile Glu Pro Ile Met Thr Arg Asp His Thr Glu Lys Met Leu Gln		
4757	195	200	205
4760	Gly Phe Gly Ala Asn Leu Thr Val Glu Thr Asp Ala Asp Gly Val Arg		
4761	210	215	220
4764	Thr Ile Arg Leu Glu Gly Arg Gly Lys Leu Thr Gly Gln Val Ile Asp		
4765	225	230	235
4768	Val Pro Gly Asp Pro Ser Ser Thr Ala Phe Pro Leu Val Ala Ala Leu		
4769	245	250	255
4772	Leu Val Pro Gly Ser Asp Val Thr Ile Leu Asn Val Leu Met Asn Pro		
4773	260	265	270
4776	Thr Arg Thr Gly Leu Ile Leu Thr Leu Gln Glu Met Gly Ala Asp Ile		
4777	275	280	285
4780	Glu Val Ile Asn Pro Arg Leu Ala Gly Gly Glu Asp Val Ala Asp Leu		
4781	290	295	300
4784	Arg Val Arg Ser Ser Thr Leu Lys Gly Val Thr Val Pro Glu Asp Arg		
4785	305	310	315
4788	Ala Pro Ser Met Ile Asp Glu Tyr Pro Ile Leu Ala Val Ala Ala Ala		
4789	325	330	335
4792	Phe Ala Glu Gly Ala Thr Val Met Asn Gly Leu Glu Glu Leu Arg Val		
4793	340	345	350
4796	Lys Glu Ser Asp Arg Leu Ser Ala Val Ala Asn Gly Leu Lys Leu Asn		
4797	355	360	365
4800	Gly Val Asp Cys Asp Glu Gly Glu Thr Ser Leu Val Val Arg Gly Arg		
4801	370	375	380
4804	Pro Asp Gly Lys Gly Leu Asn Ala Ser Gly Ala Ala Val Ala Thr		
4805	385	390	395
4808	His Leu Asp His Arg Ile Ala Met Ser Phe Leu Val Met Gly Leu Val		
4809	405	410	415

See
page 5
for
error
exp anation,

RAW SEQUENCE LISTING

DATE: 03/10/2005

PATENT APPLICATION: US/10/622,201

TIME: 15:45:20

Input Set : A:\11899.0175.REUS07.ST25.txt

Output Set: N:\CRF4\03102005\J622201.raw

4812	Ser	Glu	Asn	Pro	Val	Thr	Val	Asp	Asp	Ala	Thr	Met	Ile	Ala	Thr	Ser
4813				420				425				430				
4816	Phe	Pro	Glu	Phe	Met	Asp	Leu	Met	Ala	Gly	Leu	Gly	Ala	Lys	Ile	Glu
4817					435			440				445				
4820	Leu	Ser	Asp	Thr	Lys	Ala	Ala									
4821					450			455								

E--> 4824

See
page 5
for error
explanation.

10/6/22/201

Page 5

<U> deleted, also
deleted
end of
file

<210> 70
<211> 455
<212> PRT
<213> Artificial sequence

<220>

<223> Synthetic

<400> 70

Met Leu His Gly Ala Ser Ser Arg Pro Ala Thr Ala Arg Lys Ser Ser
1 5 10 15

Gly Leu Ser Gly Thr Val Arg Ile Pro Gly Asp Lys Ser Ile Ser His
20 25 30

Arg Ser Phe Met Phe Gly Gly Leu Ala Ser Gly Glu Thr Arg Ile Thr
35 40 45

Gly Leu Leu Glu Gly Glu Asp Val Ile Asn Thr Gly Lys Ala Met Gln
50 55 60

Ala Met Gly Ala Arg Ile Arg Lys Glu Gly Asp Thr Trp Ile Ile Asp
65 70 75 80

Gly Val Gly Asn Gly Gly Leu Leu Ala Pro Glu Ala Pro Leu Asp Phe
85 90 95

Gly Asn Ala Ala Thr Gly Cys Arg Leu Thr Met Gly Leu Val Gly Val
100 105 110

Tyr Asp Phe Asp Ser Thr Phe Ile Gly Asp Ala Ser Leu Thr Lys Arg
115 120 125

Pro Met Gly Arg Val Leu Asn Pro Leu Arg Glu Met Gly Val Gln Val
130 135 140

Lys Ser Glu Asp Gly Asp Arg Leu Pro Val Thr Leu Arg Gly Pro Lys
145 150 155 160

Thr Pro Thr Pro Ile Thr Tyr Arg Val Pro Met Ala Ser Ala Gln Val
165 170 175

Lys Ser Ala Val Leu Leu Ala Gly Leu Asn Thr Pro Gly Ile Thr Thr
180 185 190

VERIFICATION SUMMARY
PATENT APPLICATION: US/10/622,201

DATE: 03/10/2005
TIME: 15:45:21

Input Set : A:\11899.0175.REUS07.ST25.txt
Output Set: N:\CRF4\03102005\J622201.raw

L:1307 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:18 after pos.:0
M:341 Repeated in SeqNo=18
L:1367 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:22 after pos.:0
L:1388 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23 after pos.:0
L:1476 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30 after pos.:0
L:1585 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:37 after pos.:0
L:1605 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:38 after pos.:0
L:1626 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:39 after pos.:0
L:1647 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:40 after pos.:0
L:2789 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:54 after pos.:0
L:4697 M:330 E: (2) Invalid Amino Acid Designator, NUMBER OF INVALID KEYS:1
L:4697 M:252 E: No. of Seq. differs, <211> LENGTH:Input:443 Found:444 SEQ:69
L:4824 M:330 E: (2) Invalid Amino Acid Designator, NUMBER OF INVALID KEYS:1
L:4824 M:252 E: No. of Seq. differs, <211> LENGTH:Input:455 Found:456 SEQ:70